

REMARKS

Claims 33-60 remain in this application. Applicants have amended claims 33, 37, 38, 54, and 55 to more clearly point out their invention. In particular, applicants have amended claims 33, 54, and 55 to clarify that applicants conceal erroneous macroblocks errors using a weighting in accordance with the weighting applied during weighted prediction decoding of the macroblock using at least one stored reference picture associated with another macroblock. Ample antecedent basis for these amendments exists at page 5, lines 31-32 through page 6, lines 1-13 of applicants' specification so applicants have added no new matter.

35 U.S.C. § 102(b) of Claims 33-39, 43-57, 50-51 53-57 and 59-60

Claims 33-39, 43-57, 50-51 53-57 and 59-60 stand Finally Rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent 7,606,313 to Arvind Raman et al, (hereinafter, "the Raman et al. patent"). The examiner contends that the Raman et al. teaches applicants' weighted prediction for error concealment based on the weighted prediction decoding, therefore anticipating applicants' claims. Applicants respectfully disagree especially in view of applicants' newly amended claims.

Applicants submit that the Raman et al. patent teaches the use of weighted pixel values for error concealment. However, the weighted error concealment technique disclosed by Raman et al. does not make use of the same weighting as used during weighted prediction decoding of macroblocks in the stream, let alone weighted prediction coding using a stored reference picture associated with a different macroblock. In this regard, Raman et al. does not teach or suggest applicants' newly recited feature of:

weighting the at least one macroblock in accordance with [a] the weighting used during weighted prediction decoding of a macroblock in the stream using at least one stored reference picture associated with another macroblock

Raman teaches a concealment technique that makes use of an estimated sum inversely weighted in accordance with the pixels distance. (See Col. 4, lines 43-50 of Raman et al.). Alternatively, Raman et al. weighs the pixels as a function of pixels in an undamaged portion of the macroblock. (See Col. 8, lines 48-58 of Raman et al.). However, Raman et al. says

nothing about weighted prediction decoding using a stored reference picture, let alone a stored reference picture associated with another macroblock.

In the Final Office delivered March 1, 2012, the examiner has made the following characterization of Raman et al. in support of the Final Rejection of claims 33 and 54:

Raman discloses reconstruction of the detected damaged macroblock by estimating a motion vector of the damaged macroblock using motion vectors of undamaged macroblocks surrounding the damaged macroblock (Raman: column 5, lines 22-48) in the same frame, thus providing the weighted prediction from motion vectors based on information taken from the reference frame. (i.e., the prediction)

Applicants acknowledge that Raman et al estimate the damaged motion vector using motions vectors of undamaged macroblocks of the same frame. To the extent that the examiner wants to characterize the current frame of frame as the reference frame for purposes of the rejection, the examiner should appreciate that by doing so, the Raman et al. patent would not teach applicants' claim feature of:

weighting the at least one macroblock in accordance with [a] the weighting used during weighted prediction decoding of a macroblock in the stream using at least one stored reference picture associated with another macroblock

now recited in claims 33, 54, and the claims that depend therefrom. The use by Raman et al. of the current frame as the reference frame for purposes of performing weighted error concealment would clearly exclude the use of a **stored** reference picture **associated with another macroblock**, as now recited in applicants' claims.

Applicants also acknowledge the disclosure at Col. 5 lines 5-12 of Raman et al. regarding the desirability of copying the undamaged portion of a previous frame for error concealment. However, this cited portion of Raman et al. says nothing regarding the desirability of weighting the undamaged portion of the previous frame using the weighting used applied weighted prediction decoding of the macroblock stream using at least one stored reference picture associated with another macroblock. Indeed, the only weighting disclosed in Raman et al. occurs using the current frame as the reference frame, the point the examiner has emphasized.

In summary, Raman et al. does not teach or disclose applicants' claimed feature of weighting the at least one macroblock in accordance with the weighting applied during weighted prediction decoding of a macroblock using at least one stored reference picture associated with another macroblock, as now recited in claims 33 and 54. As discussed in

their previous response, a *prima facie* case of anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim” (*Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1983)) (emphasis added). The examiner has not shown that the weighting undertaken by Raman et al. corresponds to weighting the macroblock in accordance with the weighting applied during weighted prediction decoding of a macroblock in the stream using at least one stored reference picture associated with another macroblock. Thus, Raman et al. does not show each and every element of applicants’ claimed invention as arranged in the claim. For this reason alone, applicants request withdrawal of the 35 U.S.C. § 102(b) of claims 33-39, 43-57, 50-51 53-57 and 59-60.

With regard to claim 55 and the claims that depend therefrom, Raman does not disclose use of a reference picture from another frame for decoding. Thus, claim 55 and claims 57 and 59-60 patentably distinguish over Raman et al., warranting withdrawal of the 35 U.S.C. § 102(b) rejection of these claims.

35 U.S.C. § 103(a) Rejection of Claims 40-42, 48-49, 52, and 58

Claims 40-42, 48-49, 52, and 58 stand rejected under 35 U.S.C. § 103(a) as obvious over the Raman et al. patent, as discussed above, in view of US Published Application 20030215014 in the Shinichiro Koto et al. Applicants respectfully traverse the rejection in view of the amendments to claims 33 and 55.

Claims 40-42, 48-49, and 52 depend from newly amended claim 33 and incorporate by reference all of the features thereof, including the feature of:

weighting the at least one macroblock in accordance with [a] the weighting used during weighted prediction decoding of a macroblock in the stream using at least one stored reference picture associated with another macroblock.

Claim 58 depends from newly amended claim 55 and incorporate by reference all of the features thereof, including the feature of:

an error concealment parameter generator for generating values for weighting at least one macroblock using the weighting from a stored reference picture of a different frame using one of a first and second weighting modes in accordance with the decoding of the macroblocks for concealing a macroblock found to have pixel errors.

Thus, claim 58 includes the feature of weighing the macroblock from a stored reference picture of a different frame.

As discussed above with respect to the 35 U.S.C. § 102(b) rejection of claims 33-39, 43-57, 50-51 53-57 and 59-60, the Raman et al. patent says nothing regarding weighting the macroblock in accordance with the weighting applied during weighted prediction decoding of a macroblock using a stored reference picture of another macroblock. The Koto et al. published application does nothing to cure this deficiency of Raman et al. At best, the Koto et al. published application concerns a video encoding method that extracts a reference macroblock from a plurality of frames to generate reference blocks weighted and summed to yield a predictive macroblock.

Applicants' acknowledge the teaching in Koto et al. of weighted predictive decoding, a process well known in the art. However, Koto et al. says nothing about error concealment, and thus, would not provide the missing teaching in Raman et al. regarding the desirability of weighting the macroblock in accordance with the weighting applied during weighted prediction decoding of a macroblock. The complete failure of Koto et al. regarding any mention of error concealment would certainly not lead a skilled artisan to conceive of the examiner's proposed combination of Raman et al. and Koto et al.

Moreover, as discussed above, the Raman et al. patent teaches the desirability of calculating error concealment weights using the current frame as the reference frame, a point the examiner has acknowledged and even argued above. Therefore, Raman et al. would thus teach away from using weights from a different macroblock. In this regard, applicants direct the examiner to the admonition contained in MPEP 2145 (D) (2) which provides "It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983)" For these reasons, applicants' claims 40-42 and 48-49, 52, and 58 patentably distinguish over the art of record. Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection of these claims.

Conclusion

In view of the foregoing, applicants solicit entry of this amendment and allowance of the claims. If the Examiner cannot take such action, the Examiner should contact the

Serial No. 10/589,640
Art Unit 2482
Response to Final OA delivered March 1, 2012

Customer Docket PU030301
Customer No. 24498

applicant's attorney at (609) 734-6820 to arrange a mutually convenient date and time for a telephonic interview.

No fees are believed due with regard to this Amendment. Please charge any fee or credit any overpayment to Deposit Account No. **07-0832**.

Respectfully submitted,
Peng Yin et al.

By: /Robert B. Levy/
Robert B. Levy
Attorney for Applicants
Reg. No. 28,234
Phone (609) 734-6820

Patent Operations
Thomson Licensing LLC
P.O. Box 5312
Princeton, New Jersey 08543-5312
March 5, 2012